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CURS 4141
14 January 2014

Learning Theories Summary

Pulling from the learning theories website the *ARCS*, Experiential Learning, Problem-Based Learning and Bloom's Taxonomy most directly relate to my personal philosophy.

The *ARCS* philosophy relies on four steps for sustaining and promoting student motivations. The four steps include addressing attention, relevance, confidence and satisfaction. I agree with the theory that you have to spark the interests of the students and that you can do this through challenge or surprise. I personally used the challenging water tank question from Dan Meyers to work on volume word problems and also a discovery demonstration to connect the formulas for the volume of a prism and pyramid. Relevance continues to present as a key out for students. Students continuously resent problems that they feel are not relatable to their lives. This is not to say that students automatically appreciate a problem with relevance. Relevance can be used to spark interest especially in the science classroom. Explaining to students that their weather unit could have helped them understand that there was not going to be a day off due to freezing rain. From this theory the key factor is confidence. This factor guides the selection of examples and homework problems. The purpose here is to provide the students with opportunities for meaningful success so as to build their confidence and maintain their motivation to continue. The final factor, satisfaction, seems to be a combination of all the factors and the lasting affect they have on the student. When worked through successfully the previous three factors should promote a sense of satisfaction that drives the students to strive to attempt more difficult success in math.

Experiential Learning is a four stage theory that revolves around the cycle of Experience, Perception, Cognition and Behaviour. Proposing that the learning cycle can begin at any particular stage and move continuously through the complete cycle. Take for example a cycle that begins at the Experience stage. The student begins by completing an action or step. The student then observes the consequences or reactions to that action. Continuing on, the student then thinks about the why and how of the connection between action and reaction. Finally, from that thought process the student forms a plan of action or an expected beneficial behaviour. Now, they apply that plan and the cycle begins all over again. The appeal of this theory is the reflective process and the acknowledgement of a trial and error type learning style. My belief is that some students can follow visual instructions; others, verbal and another set of students just have to experience the technical aspects.

One other theory loosely linked to my own philosophy of teaching is Bloom's Taxonomy. The theory suggests that there are six levels of knowledge that students move up from knowledge, comprehension, application, analysis, synthesis, and evaluation. The description of six distinct stages is not convincing. The overall structure of the taxonomy is appealing and useful; however, the distinction between stages is forced and most likely unnecessary. Bloom's Taxonomy relates closely to the confidence factor in the *ARCS* theory. Moving from recollection, to application, then adaptation is a way for students to build confidence with simple questions then present increasing levels of understanding by using the knowledge they have. Finally, by being able to understand the intricacies of a concept students can amend their knowledge to adapt to a situation that is novel compared to the way they material was explained.

The final theory on the page that caught my attention was the Problem-Based Learning theory. The theory posits that education should be built on real world subjective problems. The focus is on driving learning with challenging problems that draw students in and encouraging them to collaborate in groups without expert direction. This interests me as I have been curious as to how to move students towards real life mathematical problems in order to increase the relevancy of the subject. My apprehension is how to complete this without over complicating the subject with the messiness of real world modelling mathematics.